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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/510,228	10/13/2004	Nathan Altman	28569	6702
67801 7590 12/17/2010 MARTIN D. MOYNIHAN d/b/a PRTSI, INC. P.O. BOX 16446 ARLINGTON, VA 22215				
EXAMINER				
PHAM, TAMMY T				
ART UNIT		PAPER NUMBER		
2629				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/510,228

Applicant(s)

ALTMAN ET AL.

Examiner

TAMMY PHAM

Art Unit

2629

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-102 is/are pending in the application.
- 4a) Of the above claim(s) 2-35, 40-46, 50-75, 78, 79 and 83-102 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 36-39, 47-49, 76, 77 and 80-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date See Continuation Sheet
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :10/12/10; 8/23/10; 8/10/10; 8/2/10; 7/25/10; 7/19/10.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement (IDS) submitted on 12 October 2010; 23 August 2010; 10 August 2010; 2 August 2010; 25 July 2010; and 19 July 2010, was filed after the mailing date. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Response to Amendment

2. Independent claims 1, 76 have been amended. Claims 2-35, 40-46, 50-75, 78-79, 83-102 have been withdrawn. Claims 1, 36-39, 47-49, 76-77, 80-82 are considered below.

Response to Arguments

3. Applicant's arguments filed 27 September 2010 have been fully considered but they are moot in view of the new grounds of rejection.

Restriction

4. This application contains claims 2-35, 40-46, 50-75, 78-79, 84-102 drawn to an invention nonelected with traverse in the reply filed on 18 December 2007. **A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.**

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 36-38, 47-49, 76-77, 80-81, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitada et al. (U.S. Patent No.: 6,798,403 B2) in view of Puma et al. (U.S. Patent No.: 5,339,259) and Ronkka et al. (U.S. Patent No.: 6,002,387).
6. **In regards to independent claim 1**, Kitada teaches of a position detection system (Fig. 2a, item 300) for use in association with computing applications (Fig. 2a, item PC), the system (Fig. 2a, item 300) comprising:
 7. a positional element (Fig. 2a, item 101) for attaining a position and comprising a first emitter (Fig. 2a, item 301) for emitting an ultrasonic waveform as a carrier wave, modulated to be decodable to fix the position (column 3, lines 20-25), and
 8. a detector arrangement (Fig. 2a, items 104a-b) for detecting the waveform, the detecting being in a manner permitting fixing of the attained position, the detector arrangement (Fig. 2a, items 104a-b) further outputting the waveform for computation, in a manner retentive of the positional information in the signal modulated thereon (column 3, lines 19-25).
9. Kitada fails to explicitly teach of a continuous waveform having continuous waveform properties and further including a signal comprising positional information modulated thereon,

the continuous ultrasonic waveform being decodable to extract the signal and the positional information;

10. a detector arrangement for detecting the continuous ultrasonic waveform comprising the signal modulated thereon; and

11. that the positional element modulates the waveform and thereby provides a carrier wave with the signal modulated thereon.

12. Puma teaches of a continuous waveform having continuous waveform properties and further including a signal comprising positional information modulated thereon, the modulating comprising locally varying the continuous properties, such that the signal comprising positional information is carried on the continuous ultrasonic waveform, the continuous ultrasonic waveform being decodable to extract the signal and the positional information; and

13. a detector arrangement for detecting the continuous ultrasonic waveform comprising the signal modulated thereon (Fig. 2).

14. It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate the concept of having a continuous ultrasonic waveform containing positional information as taught by Puma, with the position detection system of Kitada. Not only is this combination is well known in the art to utilize continuous ultrasonic waveform to detect position, but there are benefits to using this type of waveform such as interference reduction (Puma, column 1, lines 29-33).

15. Ronkka teaches of the concept to have the positional element (Fig. 1, item 51) modulate the waveform and thereby provides a carrier wave with the signal modulated thereon (Fig. 1, item 56).

16. It would have been obvious to one with ordinary skill in the art at the time the invention was made to have the positional element of Kitada with the signals of Puma, be able to modulate waves as taught by Ronkka. One of the benefits of this combination is that this provides an easy way to transfer data from a pointing device to a functional device (Ronkka, column 3, lines 15-20).

17. **In regards to independent claim 76**, in addition to the claim limitations as taught above in claim 1, Kitada further teaches of a position detection system (Fig. 2a, item 300) of a computing device (Fig. 2a, item PC), the system (Fig. 2a, item 300) comprising:

18. a positional element (Fig. 2a, item 101) for attaining a position and comprising an ultrasonic waveform emitter (Fig. 2a, item 301) for emitting an ultrasonic waveform modulated to be decodable to fix the attained position,

19. a detector arrangement (Fig. 2a, item 204a-b) for detecting the waveform in a manner permitting fixing of the position, and

20. a signal decoder (Fig. 2a, item 200) for receiving the waveform from the arrangement and decoding the attained position from the signal carrying the positional information, the positional information being obtained from a demodulation of the waveform (column 3, lines 19-25).

21. Kitada fails to teach of a continuous waveform including a signal comprising positional information modulated thereon, such that the continuous ultrasonic waveform is decodable to extract the positional information.

22. Puma teaches of a continuous waveform including a signal comprising positional information modulated thereon, such that the continuous ultrasonic waveform is decodable to extract the positional information (Fig. 2).

23. It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate the concept of having a continuous ultrasonic waveform contain positional information as taught by Puma, with the position detection system of Kitada. Not only is this combination is well known in the art to utilize continuous ultrasonic waveform to detect position, but there are benefits to using this type of waveform such as interference reduction (Puma, column 1, lines 29-33).

24. **In regards to claim 36**, Kitada teaches that the system (Fig. 2a, item 300) further comprises a decoding unit (Fig. 2a, item 200) for carrying out the computation to decode the waveform and indicate the position (column 3, lines 19-25).

25. **In regards to claim 37**, Kitada teaches that the decoding unit (Fig. 2a, item 200) comprises a maximum likelihood detector (Fig. 2a, item 200) for carrying out the decoding by finding a most likely distance (column 3, lines 10-13).

26. **In regards to claim 38**, Kitada teaches that the maximum likelihood detector (Fig. 2a, item 200) comprises a channel model for modeling passage of the waveform from the positional element (Fig. 2a, item 101) to the waveform decoding unit (Fig. 2a, item 200), thereby to provide a reference signal against which to identify the most likely distance (column 3, lines 35-40).

27. **In regards to claim 47**, Kitada teaches that the waveform decoding unit (Fig. 2a, item 200) is provided as a client program for installation in a computing device (Fig. 2a, item 300).

28. **In regards to claim 48**, Kitada teaches that the waveform decoding unit (Fig. 2a, item 200) is provided as a client program for installation in an operating system of a computing device (Fig. 2a, item PC).

29. **In regards to claim 49**, Kitada teaches that the waveform decoding unit (Fig. 2a, item 200) is integrated with the detector arrangement (Fig. 2a, item 204a-b).

30. **In regards to claim 77**, Kitada teaches that the detector arrangement (Fig. 2a, item 204a-b) and the signal decoder (Fig. 2a, item 200) are connected via an analog link.

31. **In regards to claim 80**, Kitada teaches that the detection arrangement (Fig. 2a, items 204a-b) comprises a plurality of signal detectors (Fig. 2a, items 204a-b) arranged at different

locations each separately to detect the waveform, thereby to provide the position fixing as differential information between the detected signals (Fig. 2a).

32. **In regards to claim 81**, Kitada teaches that the signal decoder (Fig. 2a, item 200) comprises at least one reference signal constructed using a model of the system and a maximum likelihood detector (Fig. 2a, item 200) for determining a most likely position based on the reference signal (column 3, lines 35-40).

33. Claims 39, 82, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kitada et al. (U.S. Patent No.: 6,798,403 B2) in view of Puma et al. (U.S. Patent No.: 5,339,259), Xu (U.S. Publication No.: 2002/0176577 A1) and Ronkka et al. (U.S. Patent No.: 6,002,387).

34. **In regards to claims 39, 82**, Kitada and Puma fails to teach that the detector is followed by a correlator for confirming the most likely distance.

35. Xu teaches that the detector is followed by a correlator for confirming the most likely distance (section [0028]).

36. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include a correlator for confirmation as taught by Xu with the detector of Kitada and the continuous waveform of Puma, in order to authenticate the information being detected, such as the position or a signature (XU, section [0001]).

Conclusion

37. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

38. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tammy Pham whose telephone number is (571) 272-7773. The examiner can normally be reached on 8:00-5:30 (Mon-Fri).

40. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

41. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TP
6 December 2010

Tammy Pham
/Tammy Pham/
Examiner, Art Unit 2629

/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629